



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/932,121 | 08/16/2001 | Lorenzo Casaccia | 010345 | 4277 |

23696 7590 06/24/2003

Qualcomm Incorporated
Patents Department
5775 Morehouse Drive
San Diego, CA 92121-1714

EXAMINER

FERRIS, DERRICK W

ART UNIT

PAPER NUMBER

2663

DATE MAILED: 06/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/932,121

Applicant(s)

CASACCIA ET AL.

Examiner

Derrick W. Ferris

Art Unit

2663

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☒ Claim(s) 19 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1-11 and 15-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over “A proposal for an RLC/MAC Protocol for Wideband CDMA Capable of Handling Real Time and Non Real Time Services” to *Roobol et al.* (“*Roobol*”) in view of U.S. Patent No. 6,208,663 to *Schramm et al.* (“*Schramm*”).

As to **claim 1**, *Roobol* discloses a proposal for a radio link control/medium access control (RLC/MAC) protocol for a W-CDMA system. Specifically, as shown in figure 1 of *Roobol*, there exists a segment layer (i.e., a LLC as is known in the art) and a fragment layer (i.e., a RLC/MAC as is known in the art) for a (BS), base station controller (RNC) and a mobile station (MS). Disclosed in section IV Radio Link Control and shown in figure 3 are the further claimed limitations of “segmenting a message into a plurality of segments” and “dividing the segments into a plurality of fragments”. For example, shown in figure 2 is one segment (i.e., a LLC Protocol Data Unit) that is further divided into a plurality of fragments called Radio Link Control (RLC) Protocol Data Units. Examiner places emphasis on page 108, right column which further discloses that “The LLC PDUs need to be segmented and then formatted into smaller blocks, RLC PDUs, suitable for transmission over the radio interface”. Thus the final limitation “transmitting the fragments” is also taught by the reference.

Art Unit: 2663

Not clearly shown in figure 1 is a plurality of base stations. Examiner notes that it would have been obvious to a skilled artisan prior to applicant's invention to have a plurality of base stations as is known in the art. The motivation for having a plurality of base stations is to segment a region (not to be confused with segmenting a message) into cells that can be serviced by a respective base station as is well known in the art prior to applicant's invention. For example, figure 3 of *Schramm* shows a plurality of base stations as is known in the art.

As to **claim 2**, *Roobol* discloses retransmitting the smallest retransmission unit which is the RLC PDU (i.e., retransmitting one of the plurality of fragments) [right-hand side, page 108].

As to **claims 3 and 4**, using a reasonable but broad interpretation of "segment parameter" and "segment indicator", *Roobol* discloses both in Section IV Radio Link Control starting on page 108 (e.g., both the LLC and RLC support ARQ).

As to **claims 5, 6, 7 and 8**, see the combined reasoning for the rejection of claims 1 and 2.

As to **claim 9**, examiner notes that it would have been either inherent or obvious to determine the start and end of a segment based on the transmission of the RLC PDUs. Examiner notes support is shown in figure 3 on page 109 where a sequence number SN field is used to determine the beginning and end of a segment as is known in the art.

As to **claim 10**, *Roobol* further discloses that ARQ is possible at the LLC (i.e., segment layer) [Section IV Radio Link Protocol on page 108].

As to **claim 11**, in addition to the reasoning behind the rejection for claim 11, *Roobol* discloses sending both positive and negative acknowledgements as is known in the art.

As to **claim 15**, see the combined rejections for claim 1 and 2.

Art Unit: 2663

As to **claim 16**, see the combined rejections for claims 1 and 3.

As to **claims 17 and 18**, see the combined rejections for claims 16 and 4.

3. **Claims 12-14** are rejected under 35 U.S.C. 103(a) as being unpatentable over “A proposal for an RLC/MAC Protocol for Wideband CDMA Capable of Handling Real Time and Non Real Time Services” to *Roobol et al.* (“*Roobol*”) in view of U.S. Patent No. 6,208,663 to *Schramm et al.* (“*Schramm*”) in further view of U.S. Patent No. 6,226,301 to *Cheng et al.* (“*Cheng*”).

As to **claims 12-14**, *Roobol* and *Schramm* may be silent or deficient to storing a segment/fragment in a buffer. Examiner notes that it would have been obvious to a skilled artisan prior to applicant’s invention to store information regarding a segment and a segment in memory. Examiner notes the motivation for storing the information is to access whether a packet has been fully transmitted or not (i.e., information in general about the packet must be stored somewhere in order to determine whether a packet has been fully transmitted or not). *Cheng* provides additional support by disclosing specific memory used to store the information [column 6, lines 57-67; column 7, lines 1-4].

Allowable Subject Matter

4. **Claims 19 and 20** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 2663

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derrick W. Ferris whose telephone number is (703) 305-4225.


The examiner can normally be reached on M-F 9 A.M. - 4:30 P.M. E.S.T.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (703) 308-5340. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 305-3900.

Derrick W. Ferris
Examiner
Art Unit 2663

DWF 
June 18, 2003


MELVIN MARCELO
PRIMARY EXAMINER